REMARKS

Applicant appreciates the courtesy of a telephone conference with Primary Examiner Bayshore and Examiner Phantana Angkool where the features of Claim 1 were discussed relative to the cited references. The following remarks were presented during the interview and it was explained that the present invention permitted an apparent real time presentation of buttons in a GUI while working within the decoding ability of a commercial reproduction apparatus sold retail to a user. The present invention permits a plurality of buttons that are subject to a substantial decoding processing load, for example to enable animation, of a selected state or condition of each button, to be realized by grouping graphics data collectively by a common state for each of the plurality of buttons. Thus complex buttons can be overlaid on a motion picture to enable an interactive display and sold as a disc set to consumers with apparent real time response to activation of each button in a plurality of buttons by the user.

The Office Action raised an issue under 35 U.S.C. §112 with regard to Claim 6 which is believed rectified in the current claims as suggested by the Examiner. Additionally, a grammatical correction of "overlayed" to the proper term --overlaid-- has been provided.

The Office Action relied upon the newly cited *Barrett* (U.S. Patent Publication 2004/0189689) in combination with *Murase et al.* (U.S. patent No. 5,907,658) to reject Claims 1, 2, 5, 6 and 9-11 as being obvious under 35 U.S.C. §103.

With the present invention, when our graphics data is appropriately set as defined in our recording medium to be read by a reproduction apparatus, the graphic data can be successively supplied to a graphic decoder and subject to a decode processing by being grouped in a predetermined order so that the decoder can adequately support an immediate interactive display

at a point in time before the entire graphics data sets would be decoded for each one of the buttons.

Thus, the present invention is able to quickly execute an initial display of an interactive display with a plurality of buttons that use animation by grouping the decodable graphic objects in a particular order. Furthermore, the graphics data that is grouped can be graphics data that defines graphics objects with the use of a pixel code representing a brightness component and a color-difference component of a pixel, and that each one state of a button material is expressed using animation by continuously reproducing a plurality of pieces of graphics data. See Page 21, Line 27 to Page 22, Line 23 of the specification.

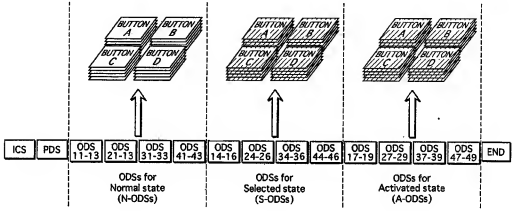
In defining an invention, a difficulty arises in using a two-dimensional verbal definition to represent a three-dimensional invention. To provide protection to an inventor and notification to the public, a proper interpretation of terms utilized in the claims must be adhered to in order to enable an appropriate evaluation of the invention and its scope relative to cited prior art.

Thus, not only should the concept of the invention be found in the prior art, but further, any cited structural elements in a prior art reference should be performing the same function with the same technical understanding to a person of ordinary skill in the field as the invention claims at issue.

Each of our current independent claims define the reproduction of predetermined states of graphical button materials as rendered by reproducing a plurality of graphical objects. Applicant respectfully submits that these claim elements as defined and supported by our specification are not taught nor suggested by any combination of the cited references.

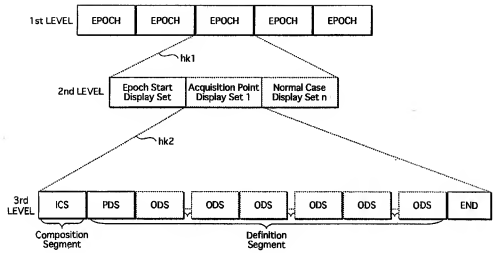
Figure 21 provides a visual representation for a reference point in understanding our claim terminology and applying it consistently with the advantages of our present invention as defined in our claims.

FIG.21



In this regard, functional segments of "ICS-PDS-ODS-N" at the bottom of Figure 21 constitute one display set that can be aligned for purposes of decoding to facilitate a seamless reproduction. In this manner, the abbreviation ICS is a functional segment defining an interactive composition segment. The abbreviation PDS defines the palette definition segment, ODS defines an object in a object_data_fragment segment, while END represents the end of a display set segment. One functional segment can be recorded in a BD-ROM after converted into one PES packet.

FIG.9



The 3rd LEVEL in the above Figure 9 discloses the composition segment of the ICS and the combination of PDS and ODSs as definition segments. The 2nd LEVEL defines a collection of display sets. The reproduction of one screen of graphics is provided by decoding and reading a series of functional segments constituting one DS, for example from a BD-ROM. See Page 18, Lines 4-16.

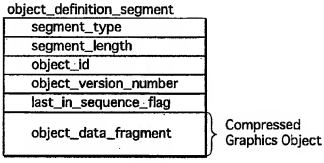
The present invention basically permits a seamless reproduction within an EPOCH at the 1st LEVEL of Figure 9. See Page 19, Lines 5-19.

Our claims also define an interactive display of a graphic user interface with button materials that can be activated by the user. This is defined on Page 21, Lines 18-26 as follows:

> In the present embodiment, such GUI parts, which are a user operation target, are called "button." The states of a button include "normal state," "selected state," and "active state," each of which is composed by a plurality of graphics in decompressed state. Each decompressed graphics representing a state of a button is called "graphics object." The reason why one state of each button is represented by a plurality of decompressed graphics is for the purpose of animation display.

The ODSs shown in Figure 21 provide information defining a graphics object and has a data structure shown in the following figure 10A.

FIG.10A



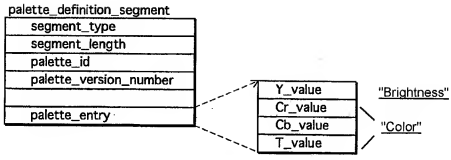
As set forth on Page 22, an ODS defining a graphics object is defined at Line 14 through Page 23, Line 17.

As can be appreciated, in our claims we define a plurality of graphic data sets, each forming a group of graphics data which renders a predetermined state of graphic button materials. Referring to Figure 21, we can determine a grouping of the data sets to collectively defined a state for each of the buttons A through D. Accordingly, portions of the data sets are collectively grouped together as a normal state, a selected state, and finally an activated state. This is the manner in which the states are presented for decoding to accelerate a video display.

As can be appreciated, again with reference to Figure 21 and the third level of Figure 9, the PDS defines a graphics object with the use of a pixel code for the brightness "Y" and color with a subsequent definition segment for graphic objects.

This is set forth in Figure 10B as follows:

FIG. 10B



and is described on Page 23, Line 18 through Page 24, Line 1 as follows:

> "palette_definition_segment (PDS)" is information that defines a palette for color conversion. A data structure of a PDS is shown in FIG. 10B. As shown by FIG. 10B, a PDS is comprised of: "segment-type" that indicates that it is a PDS; "segment_length" that indicates a data length of the PDS; "palette_id" that uniquely identifies the palette included in the PDS; "palette_version_number" that indicates a version of the PDS in the Epoch; and "palette_entry" that is information about each entry. "palette_entry" represents a red color-difference component (Cr_value), blue color-difference component (Cb_value), brightness component (Y_value), and transparency level (T-value), for each entry.

It is respectfully submitted that neither the *Murase et al.* nor the *Barrett* references, in combination, teach or suggest the above claimed terms used in the present claims.

Murase et al. (U.S. Patent No. 5,907,658) discloses an invention pertaining to a recording medium that realizes interactivity by displaying sub-picture data composed of run length data, as items in a menu. This recording medium is a DVD-Video, and has recorded thereon a video object composed of a video stream, an audio stream, and a sub-picture stream multiplexed together. The video object is composed of a plurality of video object units, with each video object unit including video data (i.e., a GOP), sub-picture data, and a management information

pack. The management information pack includes a PCI packet, and highlight information in the PCI pack realizes interactive operations in the aforementioned menu.

The *Murase et al.* reference and the present invention differ in the manner in which the states of the button materials are realized. According to *Murase et al.* Column 15, Lines 52-63 and Figure 8 the reproduction apparatus displays, for the default operation, item # 1 as the selection state and other items as standard state. If the standard state is white, selection state blue, determination state red, then, only the item for item # 1 is blue. The states are realized simply by color changes such as red, blue and white, and are not realized by a plurality of graphics objects.

In other words, *Murase et al.* realizes states of button materials by changing the display color of graphics according to an instruction of a color designation with respect to an item and not animation which as defined in our specification, is simulated movement of an object to the viewer.

The *Murase et al.* reference does not recognize nor offer a solution for a delayed display problem addressed by the present invention, and is simply relying upon changing a color per se to define a state of a button which would teach away from realizing the advantages of our present invention to a person of ordinary skill in this field.

According to *Murase et al.* Column 15, lines 52-63, the highlight information in the PCI packet includes pieces of item information #1, #2, #3, #4, #5 ...#36, and in the example in FIGURE 8, the pieces of item information are in correspondence with eight menu items, namely "(1) stairs", "(2) kitchen",... "(8) no investigation." Since each piece of item information may have a standard state, a selection state or a determination state, in the case of item # 1 being in the selection state as in Figure 8, the items #2 to #8 are in the standard state. The item

information of these items is in one group as shown in Figure 10B, and as such *Murase et al.* only groups data relating to a color pattern of buttons in accordance with states. Examining in detail this item information is the "item information #1, #2, #3, #4, #5..." in Figure 10B and, as shown by reference b3, includes "color pattern number," "start coordinate Xl," "start coordinate Yl," "end coordinate X2," "end coordinate Y2," "peripheral position information," and "highlight command field." *Murase et al.* does not teach graphics data for defining graphic objects that are grouped together for respective predetermined slots, but only teaches control information defining a color pattern, display coordinates and the like for display graphics.

In *Murase et al.* only simple information is required to define a color pattern, display coordinates and the like, and, therefore, *Murase et al.* does not group graphics data that defines a graphics object with the use of values of pixels, as shown in Figure 10B of a PDS.

According to *Murase et al.*, Column 14, Lines 39-42, a VOB can have a maximum of 32 sub-picture sub-streams, and the 32 sub-picture sub-streams have identification numbers 0 to 31. These sub-picture streams are composed of sub-picture packs, and each sub-picture pack includes run length data. Although the run length data constitutes graphics by defining values of pixels, the sub-picture data included in *Murase et al.'s* sub-picture stream is not grouped into data constituting respective items.

Given that (i) the way in which the states of the button materials are expressed is different, (ii) the data that is grouped is different, and (iii) it is not data representing design of graphic objects that are grouped, it cannot be said that graphics data defining graphics objects is grouped in *Murase et al.*

Furthermore *Murase et al.* does not resolve our technical problem of taking a long time for an initial display of an interactive display due to a large decoding load for displaying

animation, and cannot suggest a solution to our technical problem. Therefore, *Murase et al.* also differs greatly from the present invention in terms of whether or not it provides a solution for the technical problem of the present application.

The Office Action acknowledged that *Murase et al.* did not show a predetermined state of graphic button materials rendered by reproducing a plurality of graphical objects, nor did it disclose that each piece of graphics data, in the graphics data sets, define a graphic object with the use of a pixel code representing a brightness component and a color-difference component of a pixel.

The Office Action, however, asserted that the *Barrett* reference disclosed a predetermined state of graphic button materials rendered by reproducing a plurality of graphic objects and further, that each piece of the graphic data in the graphic data sets defined a graphics object with the use of a pixel code representing a brightness component and a color-difference component of a pixel.

The invention disclosed by *Barrett* (US Patent Publication 2004/0189689) relates to an image processing system that implements an on-screen display on a display device 108 by displaying on-screen display image data stored in an on-screen display buffer 114 over an MPEG-2 frame stored in a frame buffer 112.

> [0031] Figure 3 illustrates a method 300 to generate MPEG data from on-screen display data at block 302, image data corresponding to an image and formatted for on-screen display is received. At block 304, individual graphic elements of the image are generated from the image data. (underline added)

Individual graphic elements are generated, or otherwise created, by partitioning the image (e.g., the image data) within a 16x16 grid. For example, to generate individual graphic elements, an IMAGE 218 (Figure 2) represented by the on-screen display image data 216 is divided within

a 16x 16 grid 220 to generate individual graphic elements 222 which each correspond to one of the total number of blocks within grid 220.

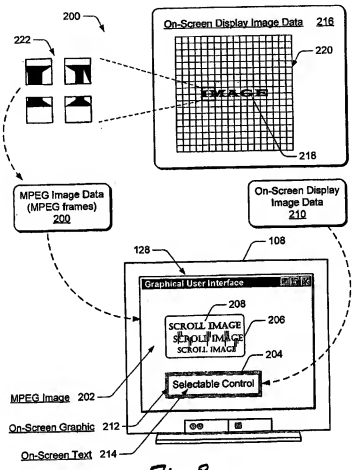


Fig. 2

As can be appreciated, the *Barrett* reference was addressing a different issue, namely a limited resource client device with a television a set top box without a graphics accelerator. See Paragraph 0002.

The problem sought to be solved was defined in Paragraph 0004 as "when generating an image formatted for display as an on-screen display unit with components of a client device other than with a central processing unit."

The solution was providing a graphical user interface as an MPEG image with the on-screen display image data being divided into a particular grid pattern as shown in Figure 2 above, with individual graphic elements 222 being compressed and then combined collectively to provide one individual graphic display. This is defined in Paragraphs 0032 and 0033 as follows:

> [0032] At block 306, each individual graphic element is encoded as one or more MPEG intra-macroblocks. At block 308, the one or more MPEG-intra macroblocks for an individual graphic element are combined to form a variable length sequence of data bits that corresponds to a compressed version of an individual graphic element. For example, an application program 116 (Figure 1) combines MPEG intra-macroblocks for a graphic element 222 (FIGURE 2) to form MPEG image data 200.
>
> [0033] At block 310, an MPEG frame is generated with an MPEG frame header. At block 312, the individual graphic elements are each positioned within a 16.times.16 macroblock grid. At block 314, the MPEG data corresponding to each macroblock is appended to the MPEG frame header in the MPEG frame. The MPEG data corresponding to a section of the original image, as well as bit sequences corresponding to macroblocks that do not include MPEG data corresponding to a section of the original image (e.g., skipped macroblocks) are interleaved and included in the MPEG frame.

Barrett suggests an on-screen display image data 210 being utilized over the MPEG image as a selectable control 204.

As can be seen in Figure 6, the content provider 602 could be a television broadcast, a movie or other stream of content that appears to be a PIP that is, a picture in a picture, only overlaid on an MPEG graphical interface.

It is clear, however, that the *Barrett* reference is incapable of teaching the specific claim elements defined in our current independent claims and that the following, for instance, can be readily ascertained.

First, the on-screen display data 216 of *Barrett* does not show states of graphical button materials. The on-screen display data 210 of Barrett shown in Figure 2 being "composed of the

on-screen graphics 212 and the on-screen text 214" is for simply rendering graphics of the background of text pictures or images of the on-screen data and do not change according to a plurality of states such as a selected state and an active state of the button. *Barrett* does not disclose graphic objects rendering a predetermined state for graphical button materials.

Second, the digital stream is different between the present invention and *Barrett*. As described above, the digital stream of *Barrett* is a combination of one or more MPEG-intra macroblocks obtained by encoding individual graphic elements. This combination is for forming a variable length sequence of data bits that corresponds to a compressed version of the individual graphic element. However, this variable length sequence of data bits does not include graphics data that forms a group of graphical objects according to each state of the graphical button materials. The digital stream of *Barrett* is not equivalent to the digital stream of the present invention.

Third, the operation on data composing graphics is different between the present invention and *Barrett*. As shown in Figure 2, pieces of the MPEG image data 200 of *Barrett* are graphic elements of "IM" part of the spelling "IMAGE" that are divided along the 16x16 grid pattern, and the graphic elements of the "IM" part form only a segment of the image. This group of the graphic elements of *Barrett* is merely a collection of the on-screen display data pieces divided into a grid pattern. Thus, *Barrett* does not disclose a graphics data sets each defining a graphics object with use of a pixel code representing a brightness component and a color-difference component of a pixel as set forth in our claims.

The method for rendering each state of the graphical button material, and the graphics stream are also different between the present invention and *Barrett*. In addition, according to *Barrett*, data pieces, each rendering a graphics image of a state of the graphical button material,

are not formed into a group. Therefore, *Barrett* can not disclose a plurality of graphics objects that render a predetermined state of the graphical button materials.

It is submitted that the present application is now in condition for allowance and an early notification of the same is requested.

If the Examiner believes a telephone interview will help further the prosecution of the case, the undersigned attorney can be contacted at the listed telephone number.

Respectfully submitted,

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